

Supporting Information

Sacrificial Ionic Bonds Need To Be Randomly Distributed To Provide Shear Deformability

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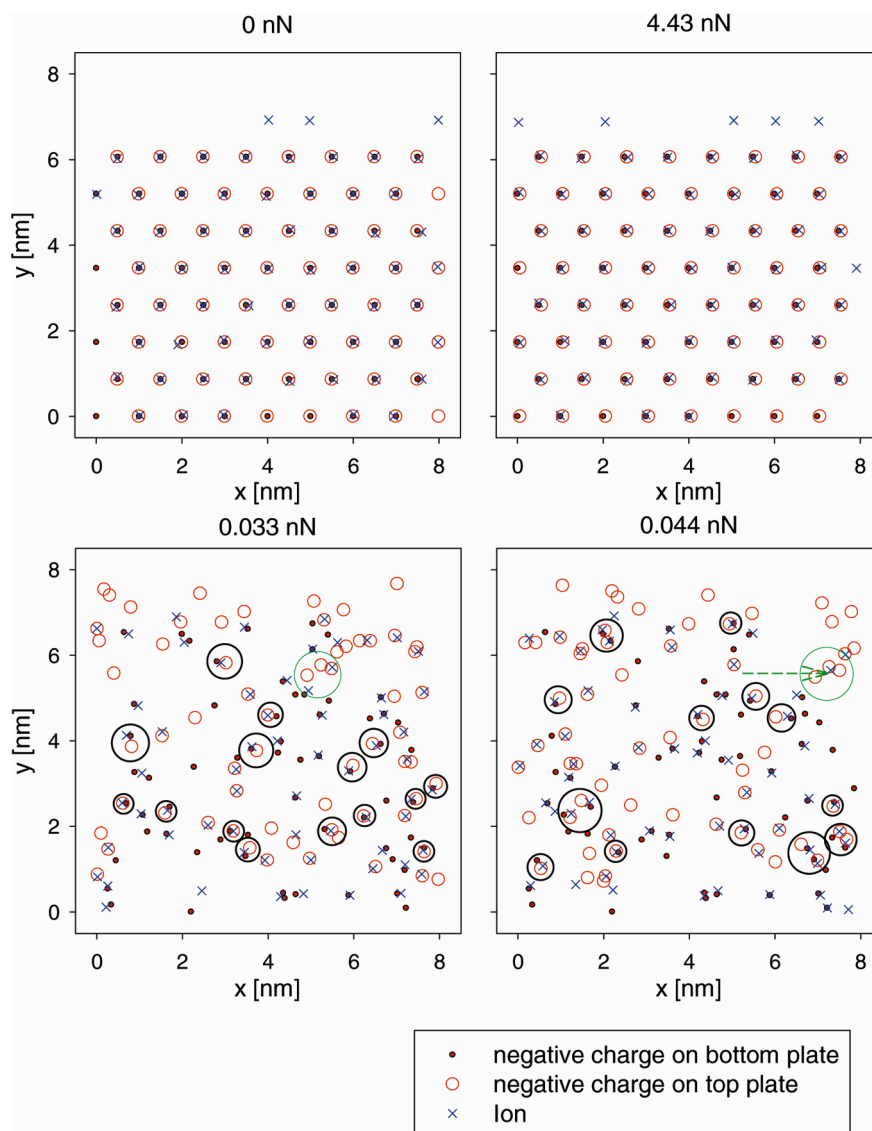


Figure 4. This figure shows snapshots to illustrate the different deformation behavior in the case of the ordered (top row) and disordered (bottom row) configurations. In the case of the ordered system the charges on the top and bottom plate (open and full red circles)

completely align, while the ions (marked with blue x) form a Coulombic bridge between them (note, that due to periodic boundary conditions also the seemingly isolated ions in the top or charges in the right take part in bridge forming). Even in the case of highest load, the displacement of the top plate is small (≈ 0.08 nm), but the shift of the top ions to the right is visible. In the lower part of the figure the configuration before and after the first slipping event as shown in the inset of Figure 2 is shown. The large, thin green circle shows the same group of charges before and after slipping to illustrate the displacement (also indicated by the green arrow). The other – thick – circles denote intact Coulomb bridges before and after slipping. There are more intact bridges after completion of the slipping event (17 compared to 15), and these bridges are on average tighter than they were before.